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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,949	11/14/2003	Byung-Youn Song	1793.1085	7769

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KAYRISH, MATTHEW	
ART UNIT	**PAPER NUMBER**
2627	

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12/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/706,949	SONG ET AL.	
	Examiner	Art Unit	
	Matthew G. Kayrish	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-18,21,22 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-18, 21, 22 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments to claims 1 and 10, filed 9/20/2007, have been fully considered but they are not persuasive.

In regard to the arguments to claim 1, that the small iron piece is not a damping member, this is not found persuasive because column 17, lines 32-37 recite a magnetic spring effect caused by the small iron piece and the permanent magnetic. The spring effect is caused by the magnetic field caused between the two pieces, and furthermore, the spring effect can be regarded in place of a spring. Springs are well known to damp vibrations, and it is also stated in column 17, lines 54-56 that the lens is not affected by shock or vibrations, therefore, the spring effect must provide at least some damping. Therefore, claim 1 is still rejected as previously presented.

In regard to the arguments to claim 10 that Uekusa does not disclose a receiving hole at the center of the objective lens, it is noted that these features are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Specifically, claim 10 states damping members inserted in shoulder portions of both sides of the receiving hole near the objective lens. The examiner agrees that the receiving hole is not at the center of the objective lens, however, the receiving hold receives the magnetic circuit made up by items 12, 13 and 21. This hole is near the objective lens, as claimed. The shoulder portions are labeled in figure 15 as item 15, and as seen in figure 6, the damping

members are inserted at shoulder portions of the bobbin. Therefore, claim 10 is still rejected for these reasons.

Regarding the argument that the vibrations disclosed in Uekusa are not the same vibrations as recited in the claims, the vibrations of Uekusa are caused by movements of the bobbin. The damping members dampen these vibrations. The vibrations of the present invention are those caused by movements in the tracking direction, as stated in paragraphs 27 & 28. Tracking movement that causes these vibrations is similar to the movements described by Uekusa, therefore, claim 10 is still rejected for these reasons.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 8, 9, 18, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimokawa et al (Japanese Patent Number JP 11-306570 A), in view of Ezawa et al (US Patent Number 5666843), and further in view of Nagai (US Patent Number 6968563).

Regarding claim 1, Shimokawa discloses:

An optical pickup actuator for driving, via a magnetic driving unit, in focusing, tracking, and tilting directions (figure 1, items 111, 112 and 113), a bobbin (figure 4, item 22) on which an objective lens (figure 1, item 23) is disposed, comprising:

Wherein the magnetic driving unit includes:

First magnets disposed at opposing sides of the bobbin, respectively;

Tracking coils which are wound around the bobbin to oppose respective ones of the first magnets;

Second magnets which are spacedly disposed from respective ones of the first magnets, respectively; and

Focusing coils which are wound between the first magnets and the second magnets;

Shimokawa fails to specifically disclose:

An optical pickup actuator with at least one damping member disposed at a position where great changes in the optical pickup actuator occur when the magnetic driving unit drives the bobbin in one of the focusing, tracking, and tilting directions, so that a size of a second resonant peak is reduced.

Wherein a first damping member is inserted in a center portion of the focusing coils and surrounded thereby.

Ezawa discloses:

An optical pick up actuator comprising:

A bobbin (figure 6, item 2);

A magnetic driving unit (figure 6, combination of magnets [13a & 13b] and coils [4a, 4b, 22a & 22b]);

Wherein optical pickup actuator includes at least one damping member (figure 6, items 3a & 3b) disposed at a position where great changes in the optical pickup actuator occur (figure 6, item 2 is subject to vibration; hence, the reason for dampers) when the magnetic driving unit drives the bobbin in one of the focusing, tracking, and tilting directions (figure 6, items 4 and 22 [coils] use magnets [13] to control focus and tracking), so that a size of a second resonant peak is reduced (figure 9, column 7, lines 8-12).

Ezawa fails to specifically disclose:

Wherein a first damping member is inserted in a center portion of the focusing coils and surrounded thereby.

Nagai discloses:

Wherein a first damping member (column 17, lines 27-42) is inserted in a center portion of the focusing coils and surrounded thereby (figure 20, item 29 is surrounded by item 21b).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include damping members at the center of Shimokawa's focus coils on their bobbin, as taught by Ezawa, because damping members disposed

at this location will not only reduce vibration, but will also help prevent vibration of the source which ultimately causes the vibration, as stated in column 7, lines 20-26. Furthermore, by providing the damping members in center portions of the focusing coils, as taught by Nagai, more securely keep the bobbin in place and will resist position changes, as noted in column 17, lines 20-31.

Regarding claim 7, Shimokawa, Ezawa and Nagai disclose the features of base claim 1, as stated in the 103 rejection above, Nagai further disclosing:

An optical pickup actuator wherein a metallic heterogeneous material is mixed with the second damping member (column 17, lines 15-16, iron piece).

Regarding claim 8, Shimokawa, Ezawa and Nagai disclose the features of base claim 1, as stated in the 103 rejection above, and Shimokawa further disclosing:

Wherein the bobbin is movably supported by plural suspension wires (figure 1, item 33).

Regarding claim 9, Shimokawa, Ezawa and Nagai disclose the features of base claim 1, as stated in the 103 rejection above, and Shimokawa further disclosing:

First yokes to which the first magnets are respectively attached (figure 1, item 30);

Second yokes to which the second magnets are respectively attached (figure 1, item 28); and

Third yokes (figure 1, item 32) to which the third magnets are respectively attached (figure 1, item 31).

Claims 18, 20 and 22 contain method limitations, which are similar to or inherent from the limitations set forth in claims 1, 8 and 9, therefore, are claims 18, 20 and 22 are met on the same basis.

4. Claims 3-7, 21 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimokawa et al, Ezawa et al and Nagai, as applied to claim 1 above, and further in view of Song et al (US Patent Number 6091553).

Regarding claims 3 and 6, Shimokawa, Ezawa and Nagai disclose the features of base claim 1, as stated in the 103 rejection above, but fail to specifically disclose:

An optical pickup actuator wherein the bobbin has corners and second damping members are respectively disposed at each corner.

Song discloses:

An optical pickup actuator wherein the bobbin has corners and second damping members are respectively disposed at each corner (figure 8, item 80).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place damping members at the corners of Shimokawa, Ezawa and Nagai's bobbin, as taught by Song, because the corners of the bobbin are the furthest from the center of the bobbin. Minimal vibrations in the center of the bobbin

can result in large uncontrollable vibrations at a large radius from the center. Provided that the corners are at the largest possible distance from the center, placing something to damp the vibrations at the extreme locations would help to damp the vibrations from a wide variety of locations on the bobbin. This would produce a more stable bobbin and would therefore give a more accurate reading of the signal.

Song disclose:

An optical pickup actuator wherein a metallic heterogeneous material is mixed with the second damping member (column 6, lines 20-28).

Regarding claims 4 and 5, Shimokawa, Ezawa and Nagai disclose the features of base claim 3, as stated in the 103 rejection above, Nagai further disclosing the features of claims 4 and 5 that are in common with those previously presented in the 103 rejection of claim 7, therefore, claims 4 and 5 are met on the same basis.

Claims 21 and 25 contain method limitations, which are similar to or inherent from the limitations set forth in claims 4, 5 and 7, therefore, are claims 21 and 25 are met on the same basis.

5. Claims 10, 11 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (US Publication Number 2003/0193854), in view of Uekusa et al. (US Patent Number 6163416).

Regarding claim 10, Lee discloses:

An optical pickup actuator comprising:

A base (figure 5, item 20);

A moving unit (figure 5, item 10) in which an objective lens (figure 5, item 11) is disposed at a side (item 11 is on the side of the moving unit) thereof and having a receiving hole at a center thereof (figure 5, items 21 & 22 stick out of these holes);

A bobbin (figure 5, item 14) which is receivable in the receiving hall (figure 5, bobbin is received) so as to move together with the moving unit (page 3, paragraph 38, bobbin [14] and moving unit [10] are attached, therefore will move together); and

A magnetic driving unit (figure 6, made up of items 12, 13, 50, 21, and 15) disposed in the base and which drives the moving unit in focusing (figure 6, items 13 and 21 control focus), tracking (figure 6, items 12 and 21 control tracking), and tilting directions (figure 6, items 15 and 50 control tilting).

Lee fails to specifically disclose:

An optical pick up actuator wherein a damping member is disposed at shoulder portions of both sides of the receiving hole near the objective lens so that a size of a second resonant peak is reduced;

Uekusa discloses:

An optical pick up actuator comprising:

A base (figure 15, item 22);

A moving unit (figure 15, item 14) with shoulders (figure 6, item 4);

A bobbin (figure 15, items 12, 13 & 21);

An objective lens (figure 15, item 11);

A receiving hole (figure 15, bobbin sits in the receiving hole);

Wherein a damping member (figure 6, item 5) is inserted in shoulder portions (figure 15, item 15) of both sides of the receiving hole near the objective lens (column 9, lines 49-55) so that a size of a second resonant peak is reduced (column 1, lines 53-61, vibrations are reduced);

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Lee et al's shoulder portions on the sides of the receiving hole with damping members, as taught by Uekusa, because the bobbin is connected to the base via the shoulders, and the tilt causing vibrations can be limited by placing damping members at the locations where the bobbin is connected to the base, as disclosed in column 9, lines 49-55.

Regarding claim 11, Lee and Uekusa disclose the features of base claim 10, as stated in the 103 rejection above, and Lee further disclosing:

Wherein the magnetic driving unit includes:

Focusing coils, which are wound around the bobbin (figure 5, item 13);

Tracking coils (figure 5, item 12), which are wound around a side of the bobbin (figure 5, item 14) and are disposed at the center portion of the receiving hall (in center part of the receiving portion); and

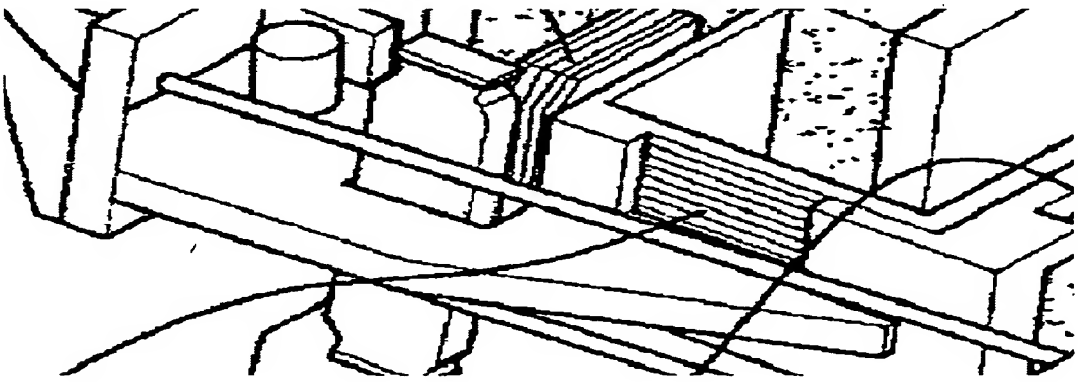
First and second magnets (figure 5, item 21) disposed at sides of the tracking coils (figure 5, items 21 & 21 are on both sides of tracking coils [12]).

Regarding claim 14, Lee and Uekusa disclose the features of base claim 10, as stated in the 103 rejection above, and Lee further disclosing:

Wherein the bobbin is movably supported by plural suspension wires (figure 5, item 30).

Regarding claim 15, Lee and Uekusa disclose the features of base claim 14, as stated in the 103 rejection above, and Lee further disclosing:

Wherein the receiving hall has shoulders at opposing sides thereof (refer to figure below), and wherein the at least one location where changes of the actuator occur most frequently are the shoulders (changes will most frequently occur at the shoulders because they are at the greatest distance from the center).



Regarding claim 16, Lee and Uekusa disclose the features of base claim 14, as stated in the 103 rejection above, and Lee further disclosing:

A first yoke to which the first magnet is attached (figure 5, item 22); and

A second yoke to which the second magnet is attached (figure 2, item 22).

Regarding claim 17, Lee and Uekusa disclose the features of base claim 16, as stated in the 103 rejection above, and Lee further disclosing:

Wherein the bobbin includes a first guide hole (figure 5, center of the bobbin), the receiving hall includes a second guide hole (figure 2, item 12 is in the second guide hole), and the first and second yokes are respectively received by the first and second guide holes (figure 5, yokes are in the guide holes).

6. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al and Uekusa et al, as applied to claims 10 and 11 above, and further in view of Sekimoto et al. (US Patent Number 5446721).

Regarding claims 12 and 13, Lee and Uekusa disclose the features of base claims 10 and 11, as stated in the 103 rejection above, but fail to specifically disclose:

An optical pickup actuator with a damping member, wherein a metallic heterogeneous material is mixed with the damping member.

Sekimoto discloses:

An optical pickup actuator with a damping member, wherein a metallic heterogeneous material is mixed with the damping member (column 4, lines 2-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make Lee and Uekusa's damping members from a

metallic material, as taught by Sekimoto. Because the damping members are there to reduce vibrations, they undergo stretching and bending, which causes wear and tear over time. By making these damping members out of metallic materials, rigidity is added to the damping members, giving them more strength, which will give them a longer life.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew G. Kayrish whose telephone number is 571-272-4220. The examiner can normally be reached on 8am - 5pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Matthew G. Kayrish

12/10/2007

MGK